

REMARKS

In response to the Examiner's objection to Claim 8, the word "monetary" has been corrected to "momentary" as suggested. Applicants thank the Examiner for pointing out this typographic error.

Applicants acknowledge that this application is currently under final rejection. Accordingly, a Request for Continued Examination has been submitted concurrently herewith, and further examination of this application is requested, taking into account the amendments set forth above, and a discussion set forth herein.

Claim 1 has been rejected under 35 USC §103(a) as unpatentable over Cole in view of Gerwers, while Claims 3 and 4 have been rejected as unpatentable over the same two references, and further in view of Lerner. In addition, Claims 5-7 have been rejected as unpatentable over Gerwers and Claim 8 has been rejected as unpatentable over Gerwers in view Hopkins (U.S. Patent No. 3,994,557), newly cited. However, for the reasons set forth hereinafter, Applicants respectfully submit that all claims remaining of record in this application distinguish over the cited references, whether considered separately or in combination.

The present invention is directed to a display arrangement for displaying optical information in an observer's field of view. As depicted in Figure 2, for example, the display arrangement according to the invention includes an image source 10, an image device 5 (including a lens 8 and glued connection 9 as shown in Figure 1) and an eyepiece 1 which is connected to the end of the transmission device 5 by means of a flange 17. The transmission device 5 is provided in the form of an optical fiber bundle which is encased along at least a part of its length within a sheath 6 of bendable material which has a mechanical memory effect. These elements can be worn on the observer's head, attached, for example, to a hand band or helmet by means of a fastening device. As noted, for example, at paragraph 18, the picture source 10 is preferably fastened on the rear of the helmet, while the clamp 16 is preferably mounted on the side of a helmet. As noted at page 2, in paragraph 6, the sheathing according to the invention is preferably an aluminum tube 6, which is glued together with the fiber optic bundle 5. According to a feature of the invention, the display arrangement includes an adjusting device comprising a holding part 7 and an adjusting screw 15 (Figures 1 and 2) which permits the picture transmission device (consisting of the optical fiber bundle and related couplings) to be secured in its momentary position following a torsional adjustment thereof. As noted in the specification at paragraph 17, this arrangement permits a rotation of the picture (from the picture source 10) within the eyepiece 1, without having to change the position of the picture source 10, which as noted previously is preferably fastened on the rear of the helmet. Such rotation is important, in that when the position of the eyepiece is adjusted in front of the viewer's eye by appropriately bending the

bendable sheath 6, the orientation of the image within the eyepiece might otherwise not be provided in a desired disposition relative to the viewer's eye. By adding an additional degree of freedom, the adjusting device eliminates this problem.

The latter feature of the invention is expressly recited in each of independent Claims 1, 5 and 8. In particular, Claim 1, as amended, recites that the display arrangement includes "a setting means" arranged between the picture source and picture transmission device, "for rotating within said eyepiece an image from said picture source, and for securing the picture transmission device in its momentary position after a torsion movement in the fiber optics section". Claim 5 has been similarly amended, while Claim 8 now recites that adjusting means are provided for rotating the orientation of the picture within the eyepiece to a desired orientation, including a setting means arranged between the picture source and the picture transmission device whereby the picture transmission device can be secured in its momentary position after a torsion movement of the fiber optics section.

In the last paragraph on page 2, the Office Action acknowledges the previously submitted amendment to Claims 1 and 5, inserting the recitation of a setting mechanism, etc. However, the Office Action further notes that the language defining this element does not sufficiently identify whether the setting mechanism is functional to secure the picture transmission device, and that no limitation is present to identify the purpose of construction of the setting

mechanism. However, by the foregoing amendment, the language of Claims 1 and 5 has been revised to utilize the "means plus function" format of the sixth paragraph of 35 USC §112, Claim 1 now reciting, for example, "means...for rotating within said eyepiece an image from said picture source" and for securing the picture transmission device in its momentary position, etc. Applicants respectfully submit that this language now identifies with particularity both the nature and function of the "setting means" in a format which must be given weight under 35 USC §112, sixth paragraph. As noted hereinbelow, this feature is neither taught nor suggested by any of the cited references.

The Cole reference, in particular, discloses a flexible optical fiber viewing system that includes an arrangement for enhancing the image transmitted by a fiber optic bundle, which ordinarily includes a large number of discrete dots of light, with line effects occurring at boundary lines between individual fibers, as noted at Column 4, lines 6-11 and Column 2, lines 53-57. For this purpose, an image acquired by the objective lens 12 is coupled into an optical fiber 22 by means of a tapered bundle that is mounted off center on a ring gear 38. The latter is rotated so that the images emitted from the face 36 of the tapered bundle are caused to "nutate" over the image-receiving end 26 of the bundle 22, as noted, for example, at Column 3, lines 11-22. At the distal end of the fiberscope 22, a similar arrangement is provided, whose motion is synchronized with the tapered bundle 32 and ring gear 38, so that the image is once again stabilized. In this manner a dynamically enhanced image is achieved, as noted at Column 4, lines 1-14. The Gerwers reference, on the other hand, discloses a

protective sleeve, into which a conventional fiber optic cable can be inserted, so that a view may observe a process being performed within a high pressure or high vacuum containment vessel. For this purpose, a sleeve 10 is provided, into which a conventional fiberscope or videoscope 70 may be inserted in order to inspect and monitor events inside the interior of the chamber C, as discussed at Column 4, lines 33-40. As shown in Figure 2, the distal end of the sleeve 10 is connected to a viewing section 50, which includes a window 54 through which the process may be viewed. As is apparent from the foregoing discussion, neither Cole nor Gerwers includes a setting means, such as is recited in independent Claims 1 and 5, by which the image from the picture source may be rotated within the eyepiece itself. Furthermore, although the Office Action states that it would be obvious to one of skill in the art to combine the teachings of Gerwers and Cole, in view of the fundamental difference in the structure and operation of those devices, it is not apparent what advantage would be gained by doing so, or how it could be done. In this regard, it is noted that the essential feature of the Cole reference lies in the synchronized rotation of off center eyepieces at either end of a flexible fiber in order to enhance dynamically the quality of a transmitted image. In any event, however, neither of the cited references teaches the setting means referred to previously, nor is there any discussion at pages 3 and 4, which addresses that feature of the invention, aside from the discussion at page 2, which has been addressed previously herein.

With regard to Claim 8, the Office Action states that the Hopkins reference teaches an eyepiece which is functional to change the orientation of the

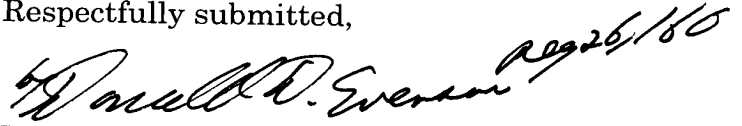
viewed image in an endoscope, by rotation of a prism, referring to Figure 1, elements 42 and 44. However, Applicants note that, although it is possible, by rotating the coaxial joints 22, 32 and 38 and the swivel joints 24, 34, and 40 (Figure 1) to adjust the eyepiece 44 to lie in any direction in space relative to the cystoscope 10, as shown in Figure 1, the Hopkins patent contains no disclosure which teaches or suggests the provision of an adjusting means for rotating the orientation of a picture within the eyepiece to a desired orientation, and more particularly no such means is provided in the form of a setting means arranged between the picture source and the picture transmission device whereby the picture transmission device itself can be fixed in its momentary position after a torsion movement of a fiber optic section. Accordingly, Applicants respectfully submit that Claim 8 distinguishes over the cited combination of Gerwers and Hopkins, for the same reasons set forth with regard to Claims 1 and 5 above.

In light of the foregoing remarks, this application should be in condition for allowance, and early passage of this case to issue is respectfully requested. If there are any questions regarding this amendment or the application in general, a telephone call to the undersigned would be appreciated since this should expedite the prosecution of the application for all concerned.

If necessary to effect a timely response, this paper should be considered as a petition for an Extension of Time sufficient to effect a timely response, and

please charge any deficiency in fees or credit any overpayments to Deposit
Account No. 05-1323 (Docket #951/49937).

Respectfully submitted,

 reg 26/80

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